

Large Valley River



Missouri River in the Wild and Scenic Area



Yellowstone River near Miles City, MT

Aquatic Ecological System Type A001 and A002

View key to subtypes

Community Description

Summary:

This ecosystem is found widely throughout the mainstem Missouri River system (7th order and larger) of the midwestern and western United States. These large, warm-water rivers have low to moderate gradient with origins in the intermontane basins of Montana. Throughout the range, river elevation is below 900m and characterized by long deep runs and pools with depths >2m, numerous mid-stream islands, side channels and interspaced riffles. Substrate characteristics are typically cobble in the riffles, sand and gravel dominated runs and pools, with gravel and/or finer-textured side channels.

Fish Community:

The members of this community consist of the Large, Medium and Large Mainstem Warmwater River Assemblages. The community indicator species are characterized by main channel species shovelnose sturgeon, pallid sturgeon, freshwater drum, paddlefish, burbot, sturgeon chub, sicklefin chub, and blue sucker. The Missouri mainstem contains one more species than the Yellowstone, the shortnose gar, that has only been recorded downstream from Fort Peck dam. Large Valley River fish communities include the side-channel communities occurring at the margins of the main current or in the quiet side-channels; these include emerald shiner, channel catfish, mooneye, sauger, flathead chub, carp, white sucker, shorthead redhorse and sand shiner. The shallow riffle habitat areas are inhabited by longnose sucker, longnose dace, flathead chub with mountain sucker in the Yellowstone River.

Macroinvertebrate Community:

This community consists of members of the Transitional Prairie River, Large Prairie River and Filtering Collector Assemblages in the riffles, with Large River Slow Current and Medium River Side-Channel Assemblages in the slow current areas and side channels, and the uncommon sand-dwelling mayfly community group in the vast sandbar areas. The community indicator species are characterized by main channel riverine dragonfly species (*Stylurus* and *Ophiogomphus*), mayflies (*Neochoroterpes oklahoma*, *Choroterpes*, *Camelobatidius*, *Fallceon quilleri*, *Acentrella insignificans*, *Ephoron*

album, and *Travarella albertana*), caddisflies (*Leucotrichia pictipes*, *Neotrichia*, *Psychomyia*, *Hydropsyche morosa* group, and *Cheumatopsyche*), and mussels - fatmucket (*Lampsilus siliquiodea*), black sandshell (*Ligumia recta*) (Missouri main stem only), and the side-channel mussel, giant floater (*Pyganodon grandis*).

Range:

The Large Valley River type occurs in the Missouri River downstream from Great Falls and below Fort Peck Reservoir and the Yellowstone River downstream from Billings. Additionally, the lower Powder River during spring run-off has occurrences of the Large Valley River fish assemblage.

Management:

Large dams and reservoirs have had the most significant negative impact on this community. Dams create barriers to the long distance spawning runs many fish in this community need, and reservoirs have submerged considerable spawning habitat. Inter-dam reaches (below Great Falls to Fort Peck Reservoir and between Fort Peck and Lake Sacagawea ND) maintain some of their pre-development channel morphology, but they are affected by altered water temperatures, unnatural water level fluctuations, and changes in sediment and nutrient transport.

Global Rank: GU

State Rank: S3

Global/State Rank Comments:

The number of occurrences in the state is fairly well known, and angler harvest is regulated for one member of this group, the paddlefish. Despite this, the Large Valley River type is at risk, and contains one of the most endangered fish in the US, the pallid sturgeon (G1S1, USFWS federally endangered). Other fish in this community are Montana Species of Concern: sturgeon chub (S2), sicklefin chub (S1), and blue sucker (S2S3). It also contains the globally rare sand-dwelling mayfly group, which is currently unranked in Montana. The occurrence of numerous threatened, rare and declining species, and consistent threats to the habitats required for spawning and rearing warrants a state rank of S3.